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<b>Notice of Allowability</b>	Application No.	Applicant(s)	
	10/665,085	LEE ET AL.	
	Examiner	Art Unit	
	Juan A. Torres	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment - After Non-Final Rejection filed on 04/13/2007.
2. ☒ The allowed claim(s) is/are 1, 3-8 and 10-15 (renumbered to 1-13).
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All    b) ☐ Some\*    c) ☐ None    of the:
  1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- |  |  |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892)   | 5. <input type="checkbox"/> Notice of Informal Patent Application                      |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                               | 6. <input type="checkbox"/> Interview Summary (PTO-413),<br>Paper No./Mail Date _____. |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),<br>Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment                    |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit<br>of Biological Material         | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance   |
|  | 9. <input type="checkbox"/> Other _____.   |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 04/13/2007 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Drawings***

The modifications to the drawings were received on 04/13/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 04/13/2007, the Examiner withdraws drawings objections of the previous Office action.

### ***Specification***

The modifications to the specification were received on 04/13/2007. These modifications are accepted by the Examiner.

In view of the amendment filed on 04/13/2007, the Examiner withdraws Specification objections of the previous Office action.

## **EXAMINER'S AMENDMENT**

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Eric S. Hyman on 5-1-2007.

The application has been amended as follows:

In line 1 of claim 15 the recitation:

"A recording medium including"

is changed to

"A computer readable medium storing a program for performing".

***Allowable Subject Matter***

Claims 1, 3-8 and 10-15 (renumbered to 1-13) are allowed.

The following is an examiner's statement of reasons for allowance: claims 1, 3-8 and 10-15 (renumbered to 1-13) are allowed because the references cited fail to teach, as applicant has, a hybrid multi-user interference cancellation method for canceling interference between a plurality of user signals, comprising (a) receiving a plurality of external user signals, calculating powers of the user signals, and providing user numbers to the calculated signal powers in their intensity orders, (b) sorting the user numbers in descending order, (c) forming at least one user cluster so that the signal powers following the sorted user numbers may differ less from a central value or a mean value in the same cluster, and (d) performing parallel interference cancellation on the respective user signals within the same cluster, and performing successive interference cancellation between the formed clusters wherein the forming comprises configuring a trellis including nodes and branches, the sorted user numbers being provided to the nodes; and forming at least one user cluster including at least one user number from a start node to an arrival node moving along the branches of the trellis; and a hybrid multi-user interference canceller for canceling interference between a

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plurality of user signals, comprising a channel estimator for receiving a plurality of external user signals, calculating powers of the user signals, and numbering the calculated signal powers in their intensity orders, a sorter for sorting the user numbers in descending order; a cluster calculator/former for forming at least one user cluster so that the signal powers following the sorted user numbers may differ less from a central value or a mean value in the same cluster, and a hybrid interference canceller for performing parallel interference cancellation on the respective user signals within the same cluster, and performing successive interference cancellation between the formed clusters where the cluster calculator/former configures a trellis including nodes and branches, the sorted user numbers being provided to the nodes, and forms at least one user cluster including at least one user number from a start node to an arrival node moving along the branches of the trellis, as the applicant has claimed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juan A. Torres whose telephone number is 571-272-3119. The examiner can normally be reached on 8-6 M-F.

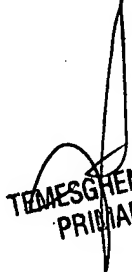
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Juan Alberto Torres  
5-1-2007

  
TEMESGHEN CHEBRETNsAE  
PRIMARY EXAMINER